

**New Program Proposal
Bachelor of Arts
Computing in the Arts
College of Charleston**

Summary

The College of Charleston requests approval to offer a new program leading to the Bachelor of Arts degree in Computing in the Arts to be implemented in Spring 2011. The proposed interdisciplinary program is to be offered through traditional instruction methods on the college's campus.

The Program Planning Summary was submitted to the Commission in June 2009. It was reviewed and voted upon favorably by the Advisory Committee on Academic Programs (ACAP) on October 8, 2009. The College of Charleston Board of Trustees approved the program proposal on May 14, 2010. The full proposal was received by the Commission on May 14, 2010.

According to the proposal, the purpose of the program is to provide an interdisciplinary undergraduate education that will give students "a liberal arts and sciences experience" by which "students will acquire the knowledge and skills to combine creativity in the arts with the tools and conceptual modeling systems of computing." The proposal further states that students will be prepared for "productive and integrated careers in the information and arts economies."

The College of Charleston currently offers undergraduate degrees in Computer Science, Computer Information Science, and Mathematics as well as a number of undergraduate degrees in the arts, including Dramatic Arts, Studio Art, Art History, and Arts Management, and Music. The proposed program will combine elements of these programs and will be the first program at the institution to combine computing and the arts. Presently, no South Carolina public institution of higher education offers a fully-integrated computing and arts undergraduate degree. The proposal notes that both Clemson University and the University of South Carolina offer studio arts and arts-based technology undergraduate programs; however, according to the proposal, these programs do not require computer science courses. The proposal also notes that Winthrop University offers a bachelor's of science in Digital Information Design which requires some computer science courses but which lacks integration with an arts curriculum.

The proposal states that the proposed program may be eligible for general accreditation through ABET. The Department of Computer Science, which will house and manage the proposed degree, has formally requested institutional funds to pursue ABET accreditation.

The program proposal cites a Fall 2009 student survey which polled student interest in the proposed program. Three-hundred fifty-four surveys were returned by students in first-year seminar courses. The survey asked students to respond to the following: "On a scale of 1 to 7, if you were in high school, how likely would CITA have been your choice of major?" Ten percent of students registered highly positive responses of six or seven, indicating that if Computing in the Arts had been a degree option when they were in high school, they likely would have chosen such a degree as a major when they entered college.

The proposal notes that “there is a thriving creative industry in Charleston, as well as nationally and internationally, which utilizes creative-skilled individuals.” The proposal also cites a 2005 study by the Austin, Texas-based Angelou Economics Group entitled “Forward Charleston: Targeted Economic Development and Marketing Strategy,” which draws upon U.S. Bureau of Labor Statistics information that indicates “national growth for design-related occupations is expected to be 21-35%.” While the Bureau of Labor and Statistics projects a decline in computer programming positions from 2008 to 2018 with the total number of computer programming positions dropping 2.9%, it also projects artistic-related positions to increase by 7.9% from 21.5 million positions to 23.2 million total during this ten-year time span. Moreover, in correspondence with staff, institutional representatives provided clarification that the same Bureau of Labor and Statistics projections show that growth in the category of “multi-media artists and animators” is projected to grow by 14.2% during the same time period. Similarly, institutional representatives cite that the unemployment rate of College of Charleston Computer Science students who graduated in May 2010 was nearly zero (only one student had not been placed).

The proposed program will require a total of 122 credit hours for graduation. Beyond General Education requirements, the program will consist of 50 credit hours of required coursework divided among the areas of computer science, mathematics and an art area of specialization. Art areas currently include music, art and art history, and theatre as well as “Computing in the Arts (CITA) synthesis courses.” These synthesis courses are specifically designed to integrate computing and one or more arts areas and, according to the proposal, are “strategically placed through the curriculum to ensure a cohesive degree program.” The program will include a senior capstone course (10 credit hours); computer science coursework with three required computer programming courses (16 credit hours); mathematics coursework in calculus and discrete structures (6 credit hours); and arts concentration coursework in either Fine Art, Music, or Theatre (18 credit hours).

Two new courses will be added to College of Charleston course catalog to support the program. The first course is a one-credit seminar course (CITA 295), which will serve as a prerequisite for the second new course, a senior capstone course (CITA 495). According to the proposal, during the capstone course, “students will read and analyze the latest research in the expanding field of computing in the arts, and will develop individual research projects integrating their skills and knowledge for both written and oral presentation.” The three other CITA courses to be offered already exist as computer science courses and will be cross-listed as CITA courses.

The proposal states that admissions and transfer criteria will be the same as for all other College of Charleston undergraduate programs. The proposal also states that current articulation agreements will apply.

The proposal anticipates there will be three new students (1.5 FTE) in the program’s first year, increasing to ten students (7.5 FTE) in the second year, increasing to 13 students (11.5 FTE) in the third year, increasing to 18 students (16.5 FTE) in the fourth year, and further increasing to 25 students (26.5 FTE) by the fifth year of the program. If enrollment and program completion projections are met, the proposed program will meet the Commission’s productivity standards.

The program proposal states that no new faculty will be hired for implementation of this program. The institution notes, however, that if the program grows significantly, new faculty may be needed to account for increased enrollments. The proposal also notes that the two proposed new courses, CITA 295 and CITA 495, will be team-taught by existing faculty in the Computer Science and the Arts areas. The institution states that a program director will be needed to handle administrative issues that will be present given the program's interdisciplinary organizational placement between two academic departments; however, the cost will be borne by the College of Charleston through provision of a stipend to the faculty member appointed to the position. Existing staff will cover secretarial, web design, and promotional activities.

The proposal states that no extra facility or equipment costs are anticipated and that grants from the National Science Foundation have resulted in the purchase of new equipment which will be used for the Computing in the Arts program. During correspondence with staff, institutional representatives clarified that computing devices used for the program will be standard desktop and mobile devices. The following equipment and software descriptions as well as sources of funding were provided:

- General purpose computers (50 computers received from a Google grant representing a one-time gift of \$38,000)
- Five general purpose computers, one mixing board, microphones, and five display devices (representing a one-time \$50,000 expenditure from an existing NSF grant)
- Twenty-five general purpose computers and an 82-node Beowulf computer (\$100,000 from the departmental operating budget to cover ongoing replacement cycle needs)
- One RAID Terabyte storage array (\$100,000 expenditure from an existing NSF grant)
- Three lab classrooms (from the institution's IT operating budget, representing \$120,000 every five years)
- Digital cameras (indirect funds from the departmental operating budget)
- Commercial software licenses, including the following: Microsoft (\$1250 per year); Adobe (\$15,000 per release); Open source programming (Linux; Python and IDE, Java, Eclipse, ActionScript, Objective C); Open course tools (such as Audacity for music layering; GIMP for image editing; Celtx for storyboarding; Blender and Alice for 3D design).
- The institution states that the equipment and software listed are in part already in use by students in other computer science majors; however, these have the capacity for use by CITA majors without adding to the current inventory.

Institutional representatives also clarified with staff that because of the existing equipment and classroom laboratory capacity available as well as the availability of open source software for art, music and theatre applications and programming environments, no new or additional facility or equipment costs are anticipated nor requested. The institution notes, however, that the academic departments offering the proposed program reserve the right to increase facilities if the number of sustained majors exceeds 50 majors per year as described in the proposal.

The proposal states that the College of Charleston's library resources will adequately support the proposed program curriculum without the need to introduce new resources. The proposal further notes that PASCAL's digital resources positively augment the College of Charleston's current computing and arts collections.

New costs and sources of financing identified by the institution for the proposed program are shown below:

ESTIMATED COSTS BY YEAR						
CATEGORY	1st	2nd	3rd	4th	5th	TOTALS
Program Administration						
Faculty Salaries (plus fringes)						
Graduate Assistants (plus fringes)						
Clerical/Support Personnel						
Supplies and Materials	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$5,000
Library Resources						
Equipment						
Facilities						
Other (Describe)						
TOTALS	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$5,000
SOURCES OF FINANCING BY YEAR						
Estimated FTE Revenue Generated from the State						
Tuition Funding (New students only)	\$57,404	\$71,756	\$93,282	\$129,160	\$179,389	\$530,991
Other State Funding (Legislative Appropriation)						
Reallocation of Existing Funds						
Federal Funding						
Other Funding (Endowment, Auxiliary etc.)						
TOTALS	\$57,404	\$71,756	\$93,282	\$129,160	\$179,389	\$530,991

These data demonstrate that if College of Charleston can meet the projected student enrollments and contain costs as shown in the proposal, the proposed program will be able to cover costs with revenues it generates beginning in the second year of implementation.

In summary, the College of Charleston is proposing a program leading to the Bachelor of Arts degree in Computing in the Arts. Designed as an interdisciplinary program which will fully integrate study in computing science and the arts, the program will draw heavily from current resources and materials in the Department of Computer Science and the School of the Arts. The proposed program is intended to provide a liberal arts and sciences undergraduate training experience for students planning to seek careers that combine creativity in the arts with conceptual modeling systems of computing.

Recommendation

The staff recommends that the Committee on Academic Affairs and Licensing commend favorably to the Commission approval of the program leading to a Bachelor of Arts degree in Computing in the Arts at College of Charleston, to be implemented in Spring 2011, provided that no "unique cost" or other special state funding be required or requested.